

USDA

“THE PEOPLE’S DEPARTMENT”

- **Founded in 1862 by President Abraham Lincoln**
- **50% of the “People” were farmers**
- **Farmers needed good seed and good information**
- **He realized science and technology critical**

Agriculture in the 21st Century



- Less than 2% of the “People” farm
- 100% of the “People” eat and wear clothes
- Most abundant, highest quality, safest, and least expensive
- World wide agricultural exporter
- Largest supplier of food assistance to World needy
- Environmentally responsible
- Stewards conserving soil, water, and air quality

DECISION MAKERS

- **Economically Productive**
- **Technology and Equipment**
- **Data Collection**
- **Data Analysis**
- **Data Interpretation**

GIS & Information Systems

The New Agricultural Tools



What is GIS?

Geographic Information Systems is a software system which:

- maps and analyzes geographic data
- incorporates graphical features with tabular data
- identifies data according to its location

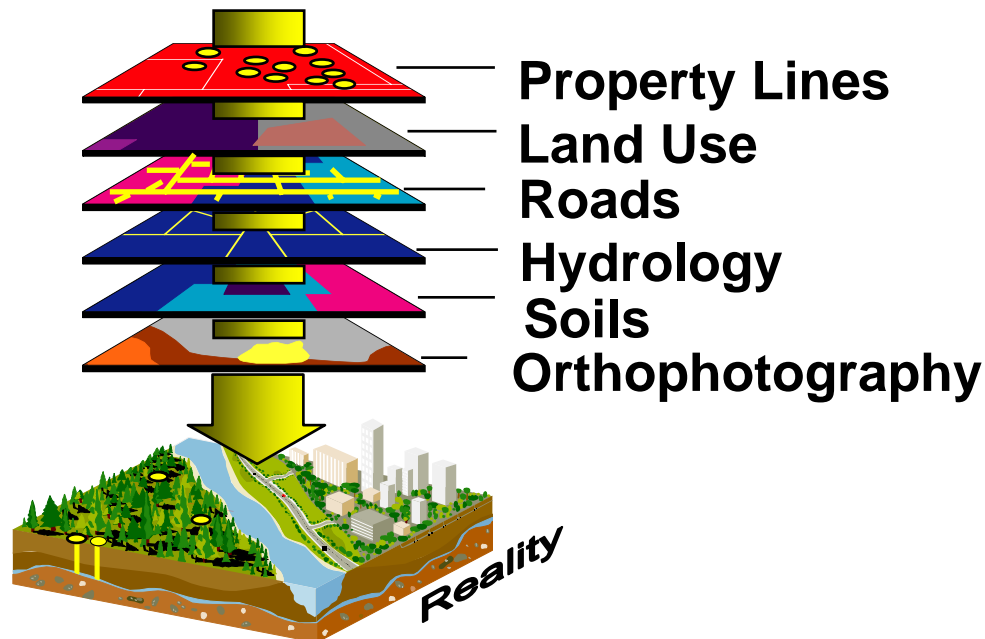
Data Integration for Farm Management Using GIS



Data regarding land units, cropping history, soil types, topography, hydrology, climate, satellite imagery, and more is available, and the volume of such data will only increase in the future.

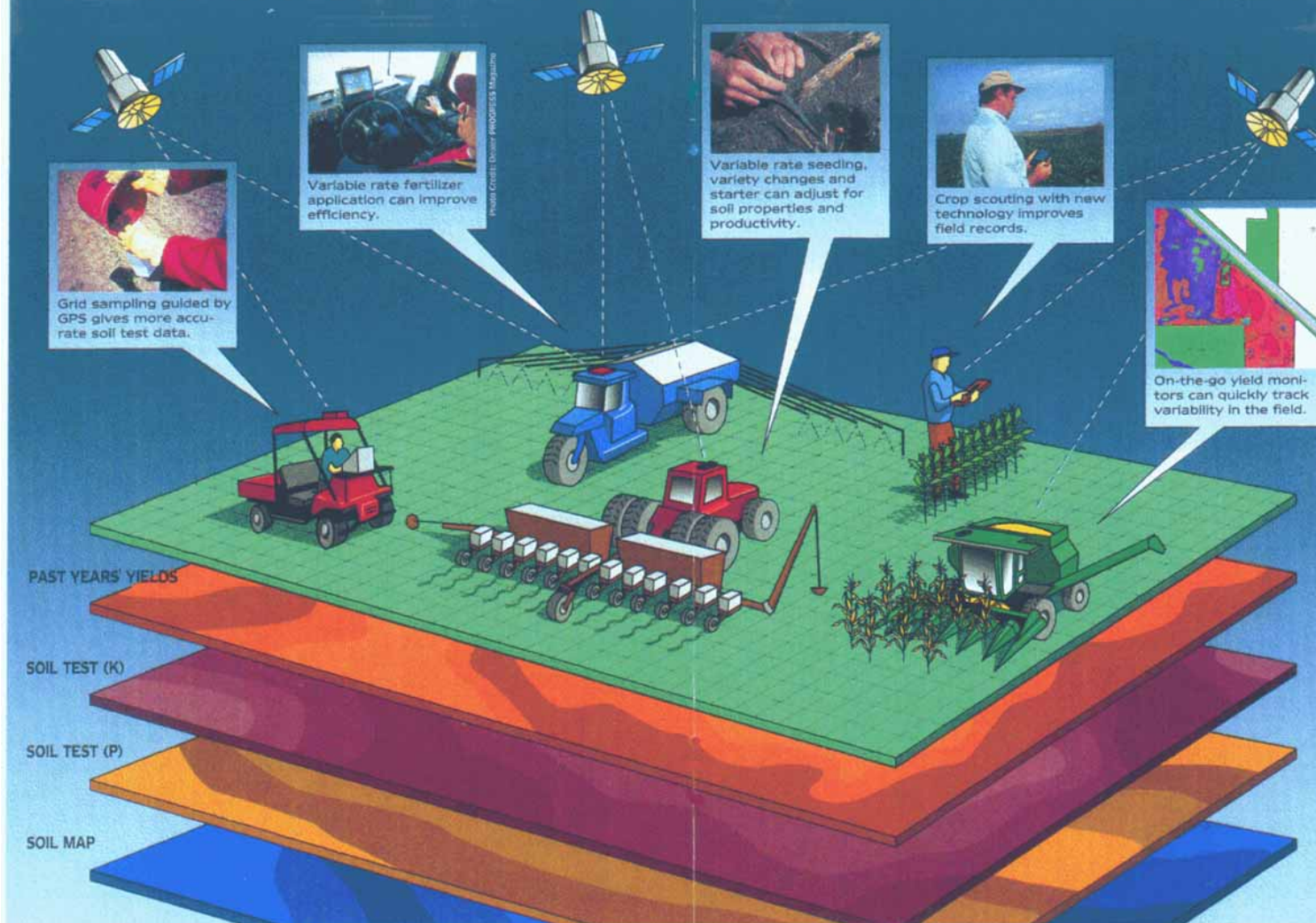
GIS Integrates All the Parts...to See the Whole

Collecting information associated with a specific location, georeferenced agricultural data, at the farm is of course only the beginning of the solution to assist in better decision making for improved management and increased productivity.



Use of Geographical Tools GIS & GPS

HIGH-TECH TOOLS FOR SITE-SPECIFIC CROP NUTRIENT MANAGEMENT





Using computers to analyze and visualize data from various sources simultaneously.

“If a picture is worth a thousand words, then imagine the value of an intelligent map”

GIS Data for the Service Centers

- **Common Land Units**
 - Digitized Field and Tract Boundaries
 - Built on the DOQ base map
 - Replaces handwritten annotation on Aerial Photography sheets with a seamless county image

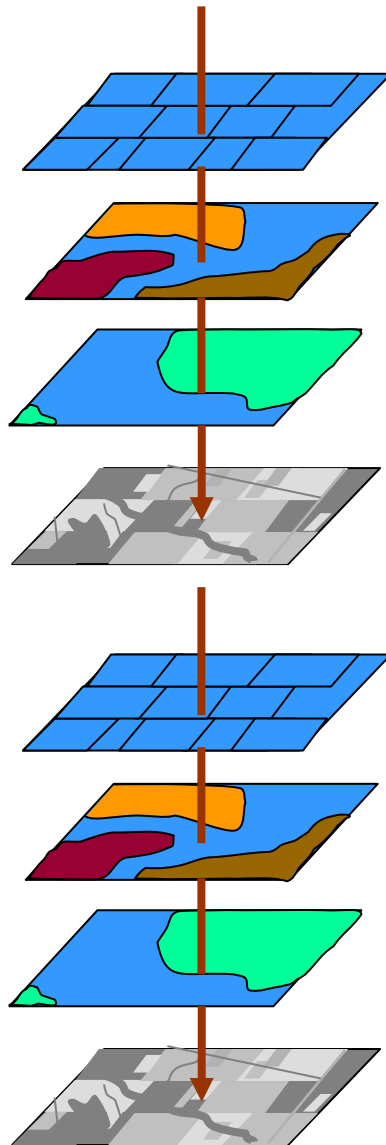


Current Service Center: Measuring Field with Planimeter



Benefits of GIS Technology

- Perform Geographic Queries and Analysis
- Precise acreage determinations
- Create quality farm maps for producers
- Crop reports directly on maps
- Eliminate need to project 35mm slide images on hard copy maps
- Data sharing and increased efficiencies



USDA Funded Themes

Public Land Survey - **USFS**

Soils - **NRCS, USFS**

Hydrologic Units - **NRCS**

Orthoimagery - **FSA, NRCS, USFS**

Common Land Unit - **FSA**

Climate - **NRCS**

Land Use/Cover - **USFS, NASS, FSA**

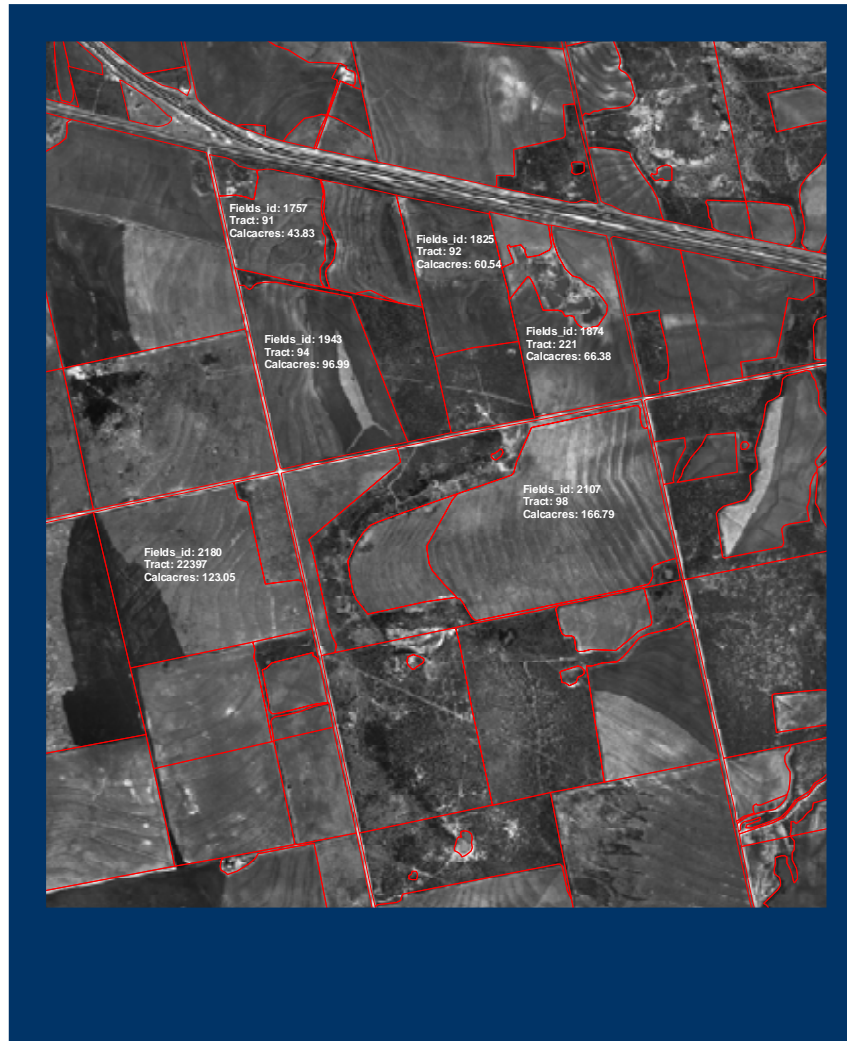
Digital Raster Graphs - **USFS**

Government Units - **USFS**

Other Required Themes

Cultural Resources
Demographics
Easements
Elevation
Geographic Names
Hydrography
Floodplains
Research Data
Satellite Imagery
Social & Economic
Toxic Sites
Transportation
Wetlands
Wildlife Habitat &
Endangered Species

Delineated Common Land Unit



DOQ with CLU

An aerial photograph of a rural landscape, likely a farm or tract, overlaid with red lines representing land use boundaries (CLU). The landscape features a mix of agricultural fields, some with distinct patterns, and areas of dense vegetation or trees. A winding road or path is visible on the left side. The text overlay in the upper center provides specific information about the land.

Farm: 2917
Tract: 6766
Calcacres: 114.00
Hel: N

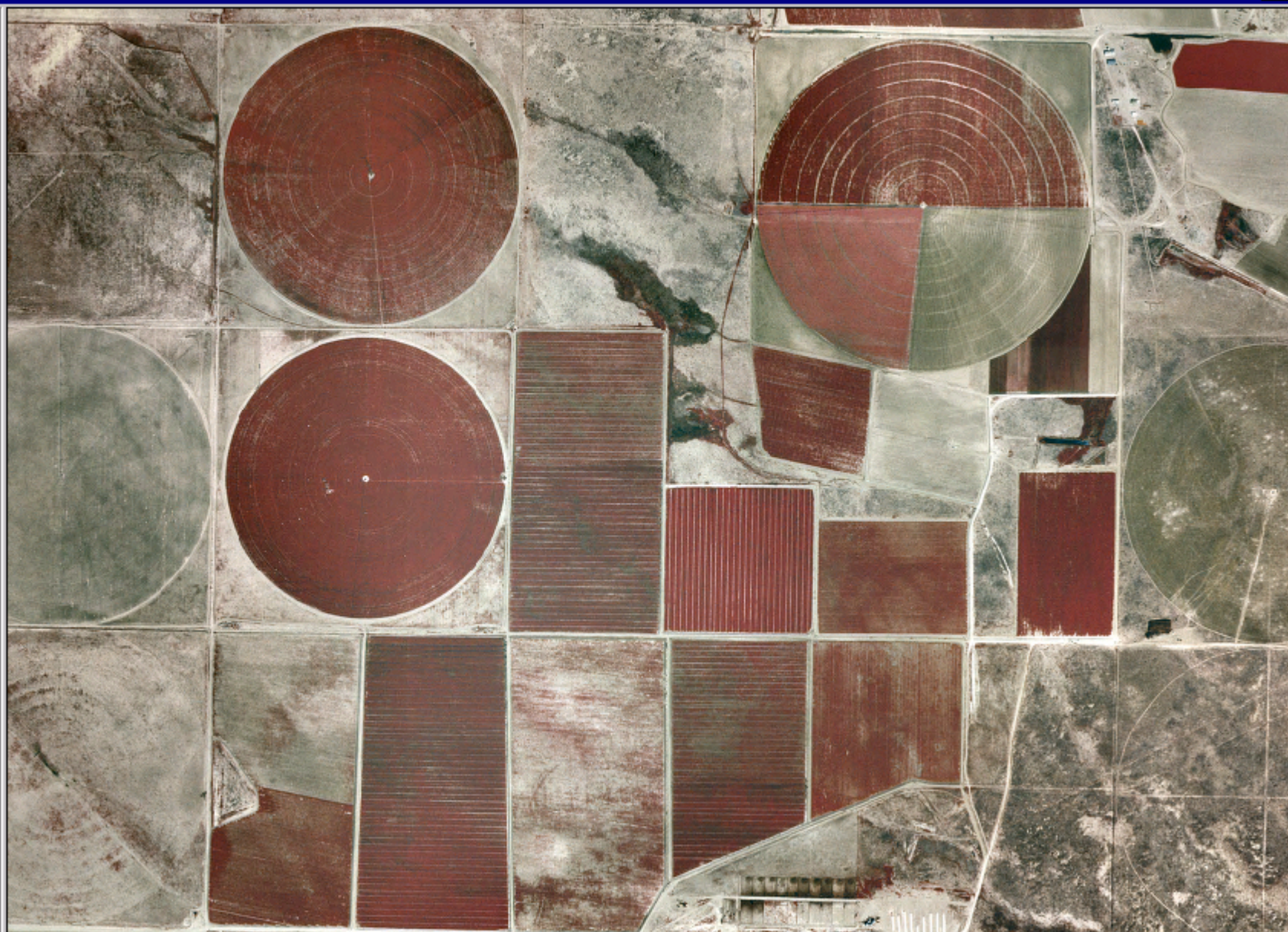


Scale 1:

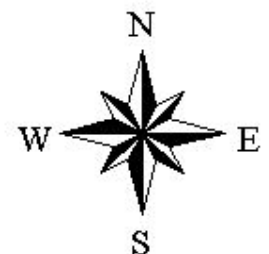
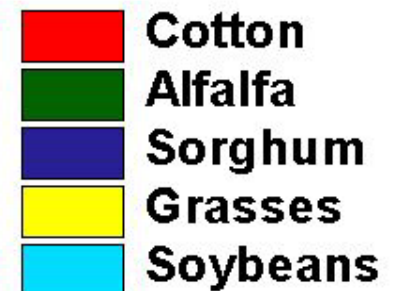
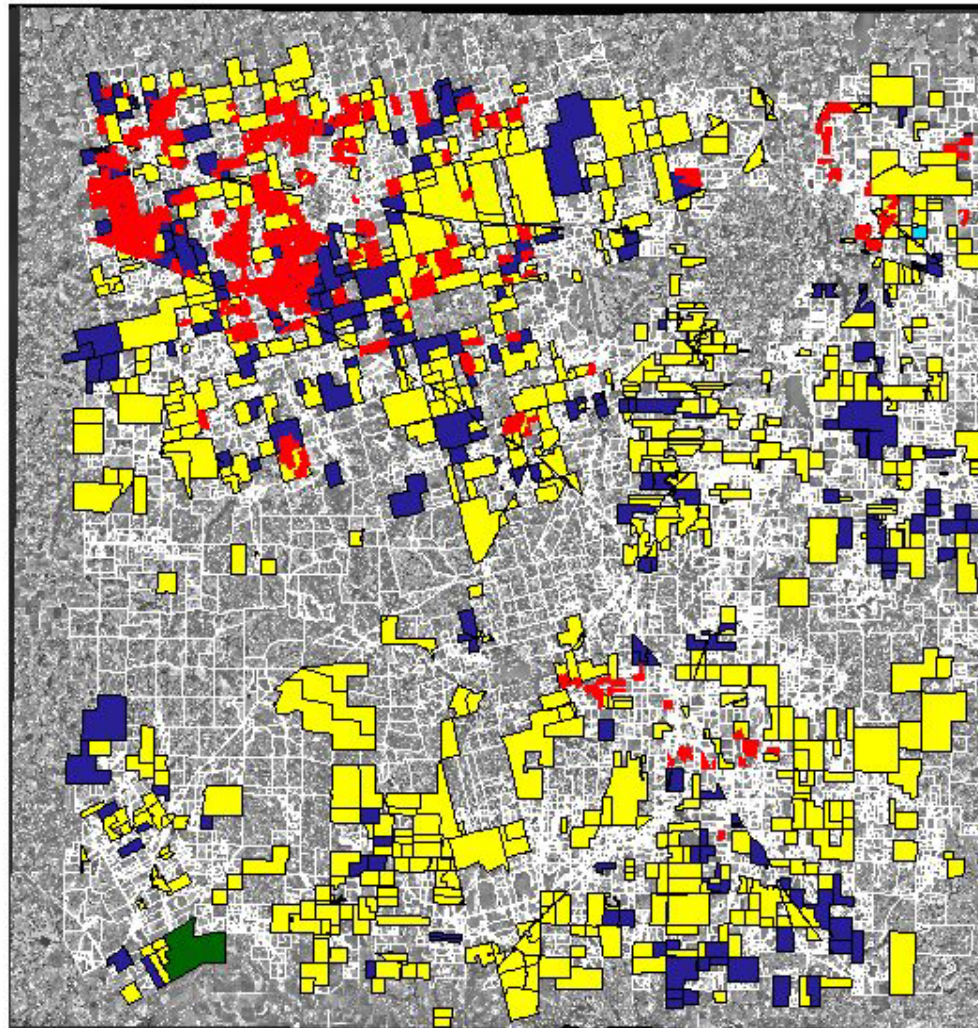
277,184
3,600,604

View1

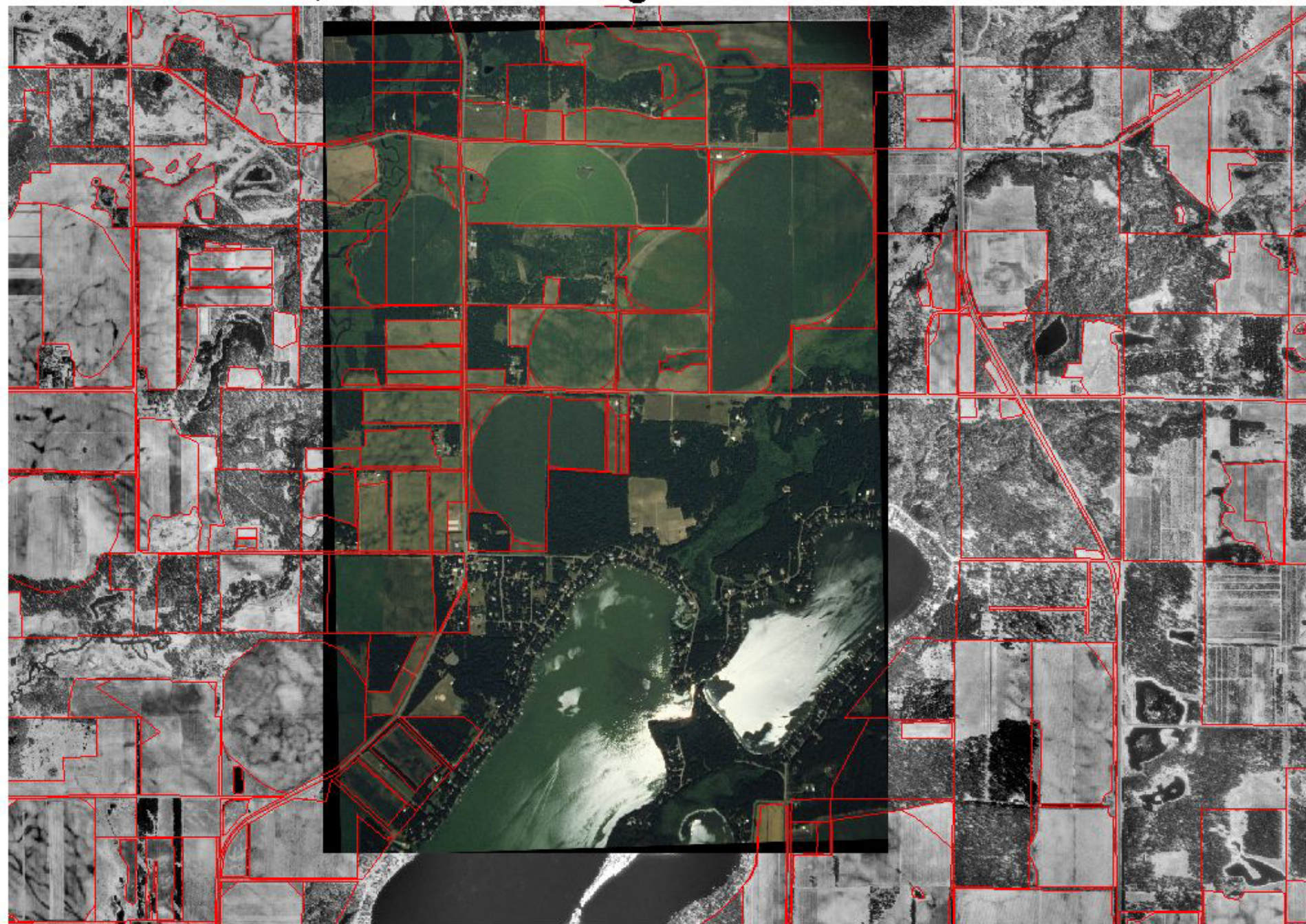
Mosaic.sid



Some Reported Crops in Taylor County, Texas



DOQ, CLU with Single Rectified 35mm Slide



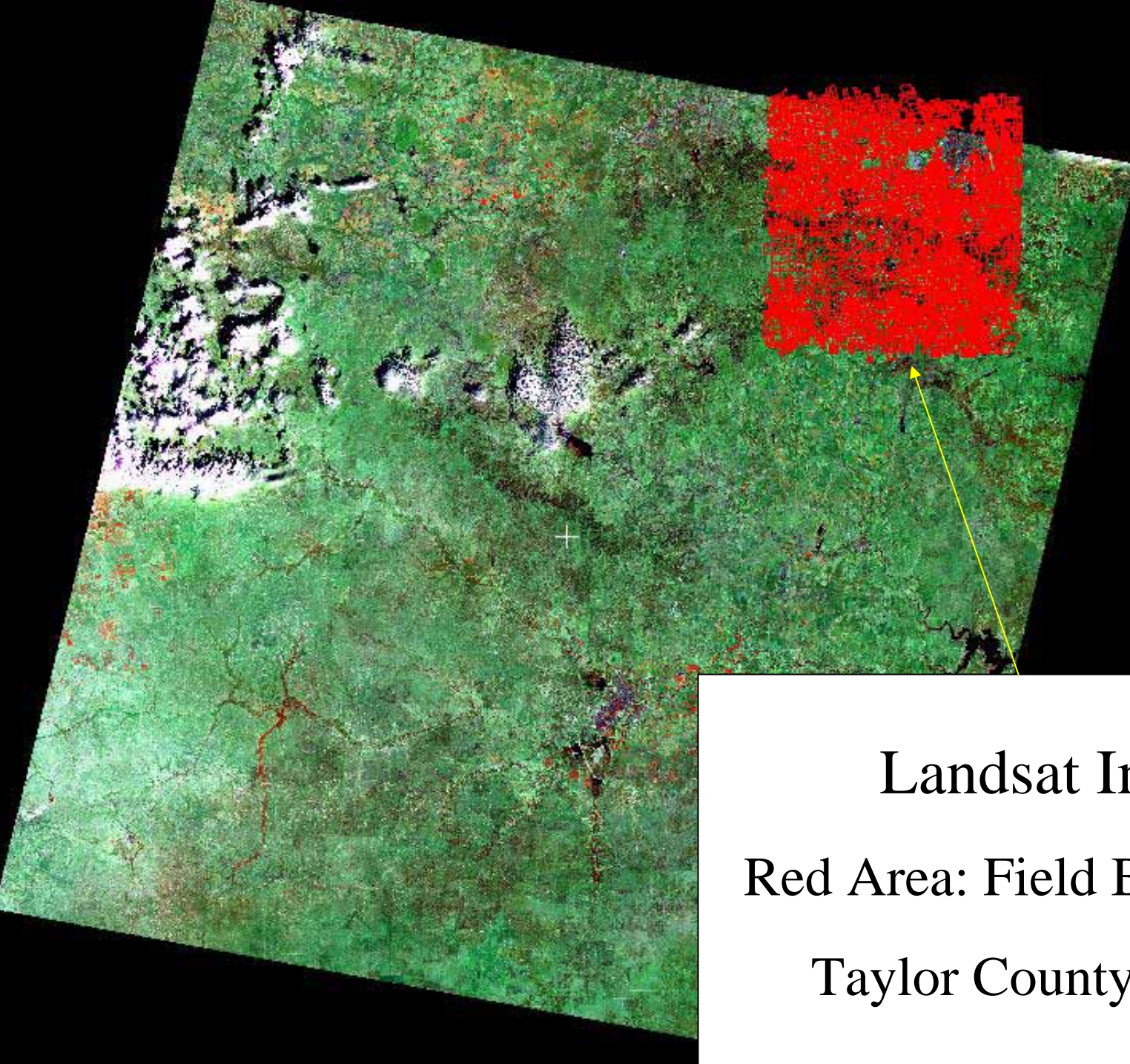
35mm Slide with CLU

An aerial photograph of a rural landscape, likely in a coastal or agricultural region. The image is overlaid with a network of red lines representing the boundaries of a 35mm Slide with CLU (Conservation Land Use). The landscape features a mix of green fields, dark green wooded areas, and some brownish patches. A prominent road or canal runs vertically through the center. In the upper right, there's a large, irregularly shaped green field. In the lower right, there's a large, dark green wooded area. The red lines delineate various parcels of land, some of which are labeled with text.

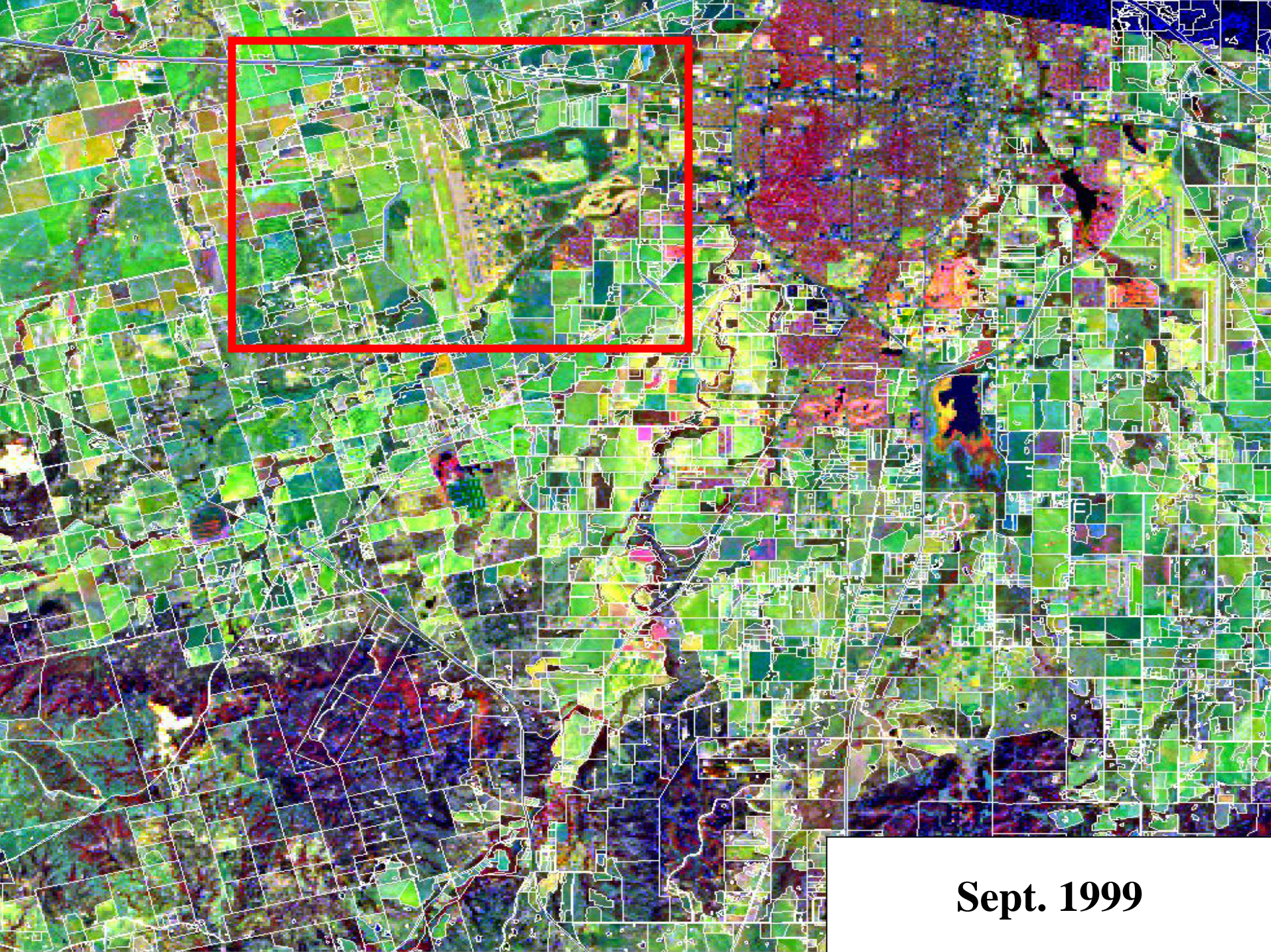
Farm: 2917
Tract: 6766
Calcacres: 114.00
Hel: N

Area Calculated 62.84 Acres with
1.03 Acre Inclusion





Landsat Image
Red Area: Field Boundaries
Taylor County, Texas.



Sept. 1999



**Zooming Into Air Base
Sept 1999**

SCS/Farm Service Agency - Customer and Land Records

CRP

File Edit View Theme Graphics Window Help

Scale 1: 6,283 600,835.14 4,274,119.94

Tract 234

Fields in Tract 234

- NHEL
- HEL
- HEL not defined

Land Unit Attribute Data Entry

Labels

Farm: 101

Tract: 2102

Field: 0

Acres: 150.1

HEL Status

☐ Yes

☐ No

☐ Exempt

☒ Undetermined

OK

Cancel

Customer Profile

General Detail Info Supplemental Data

Full Name: Clarence Mummert

Address: Woodland Ave
Scottsburg, IN 47170

Home: 111-555-5555

Business: 111-555-5556

Fax:

Mobile:

E-mail: c.mum@net.com

Current Customer Activities

One Month

Name	Type	Location	Date
CRP Application	Journal	Outlook	1999-06-11 16:23
CRP Application	Journal	Outlook	1999-06-11 13:21
CRP Application	Journal	Outlook	1999-06-10 14:36
CCC-677-1_Farm_Storage_Loan_Worksheet	Journal	Outlook	1999-06-10 13:55
CCC-677-1_Farm_Storage_Loan_Worksheet	Excel	F:\Applic...	1999-06-10 13:55
AD-245_Request_for_Cost-Shares	Journal	Outlook	1999-06-10 13:53
AD-245_Request_for_Cost-Shares_06_10...	Word	F:\Applic...	1999-06-10 13:53
CRP Application	Journal	Outlook	1999-06-10 13:51
Denial_Letter	Journal	Outlook	1999-06-10 13:50

SCI/Farm Service Agency - Land Use Project

Commodity Reporting - John H. Smith Farm 681

File View Help



Reported Commodity:

Wheat

Variety

Soft Red Winter

Intended Use

Silage

Irrigation

I

N

N/A

Planting Date

09/01/1999

Beginning Harvest Date

07/10/2000

Commodity Status

Planted

Customer Share

100%

Planting Pattern

Y

N

Land Selection Acreage: 235.7

Planting Pattern Acreage Deduction:

Reported Acreage: 235.7

Fields Reported:

1002579863255489

6523794513025089

7254489632185354

4412596350078602-A

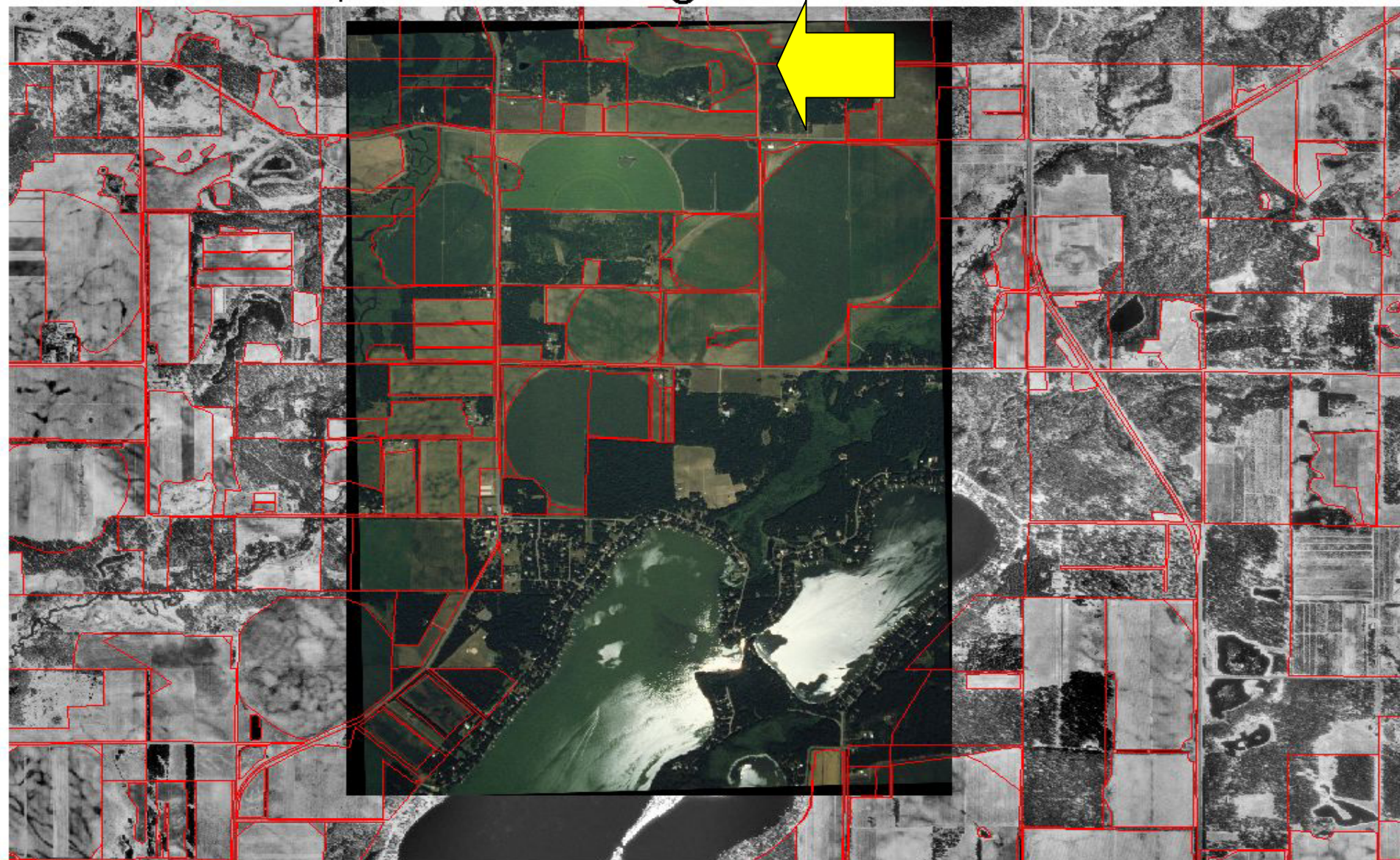
Status

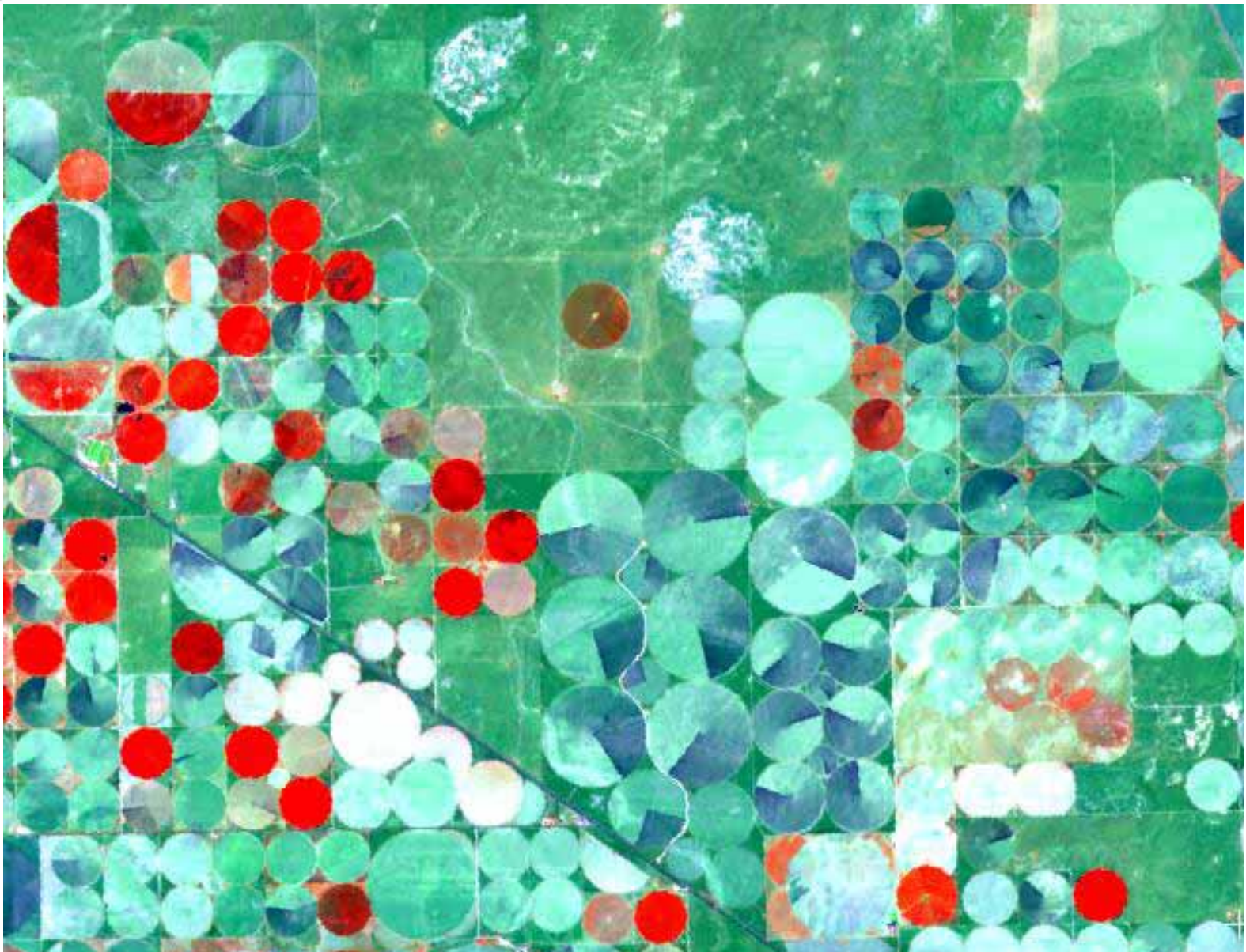
10/22/00

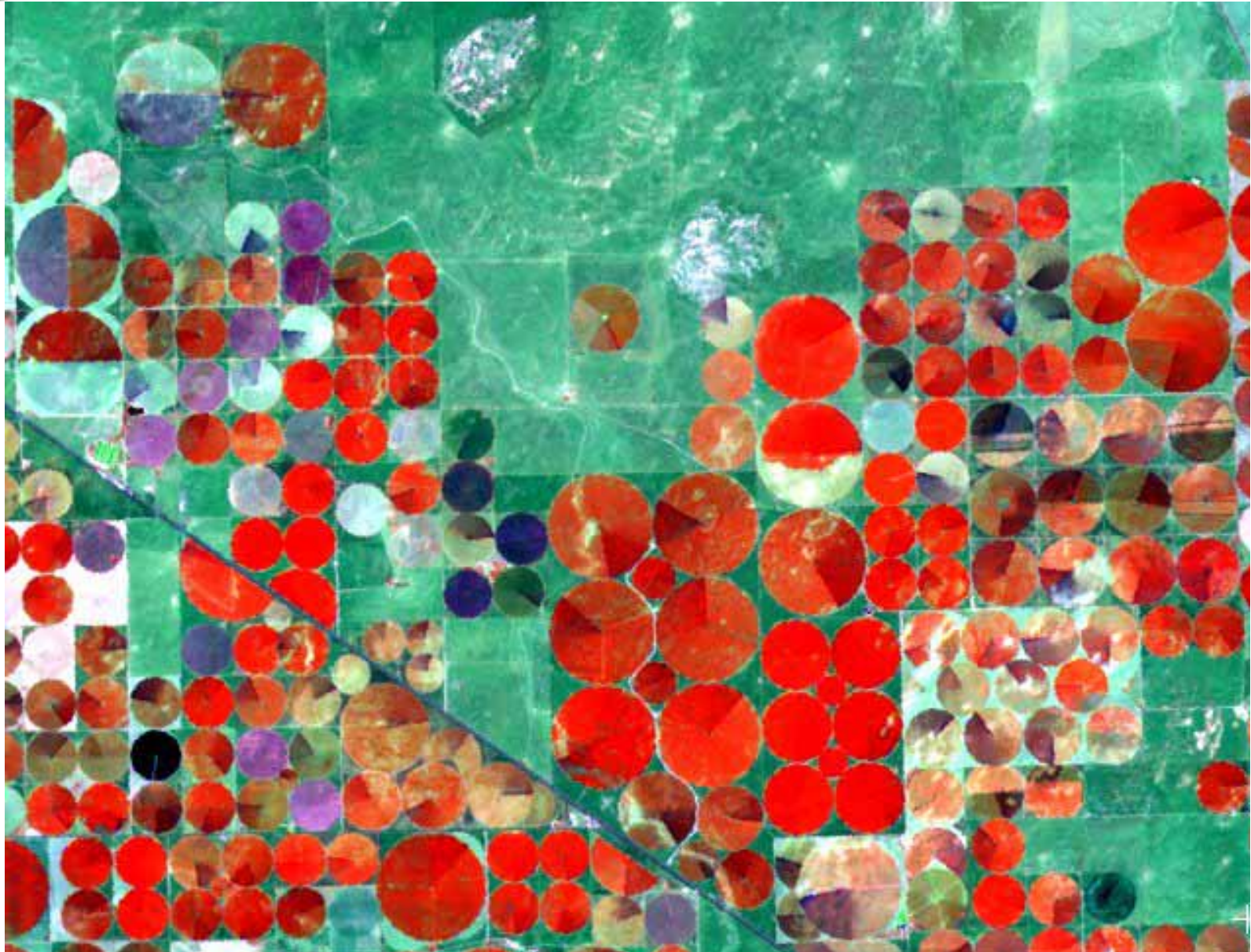
12:21 PM

SCI/Farm Service Agency Compliance with digital 35mm Slides

DOQ, CLU with Single Rectified 35mm Slide



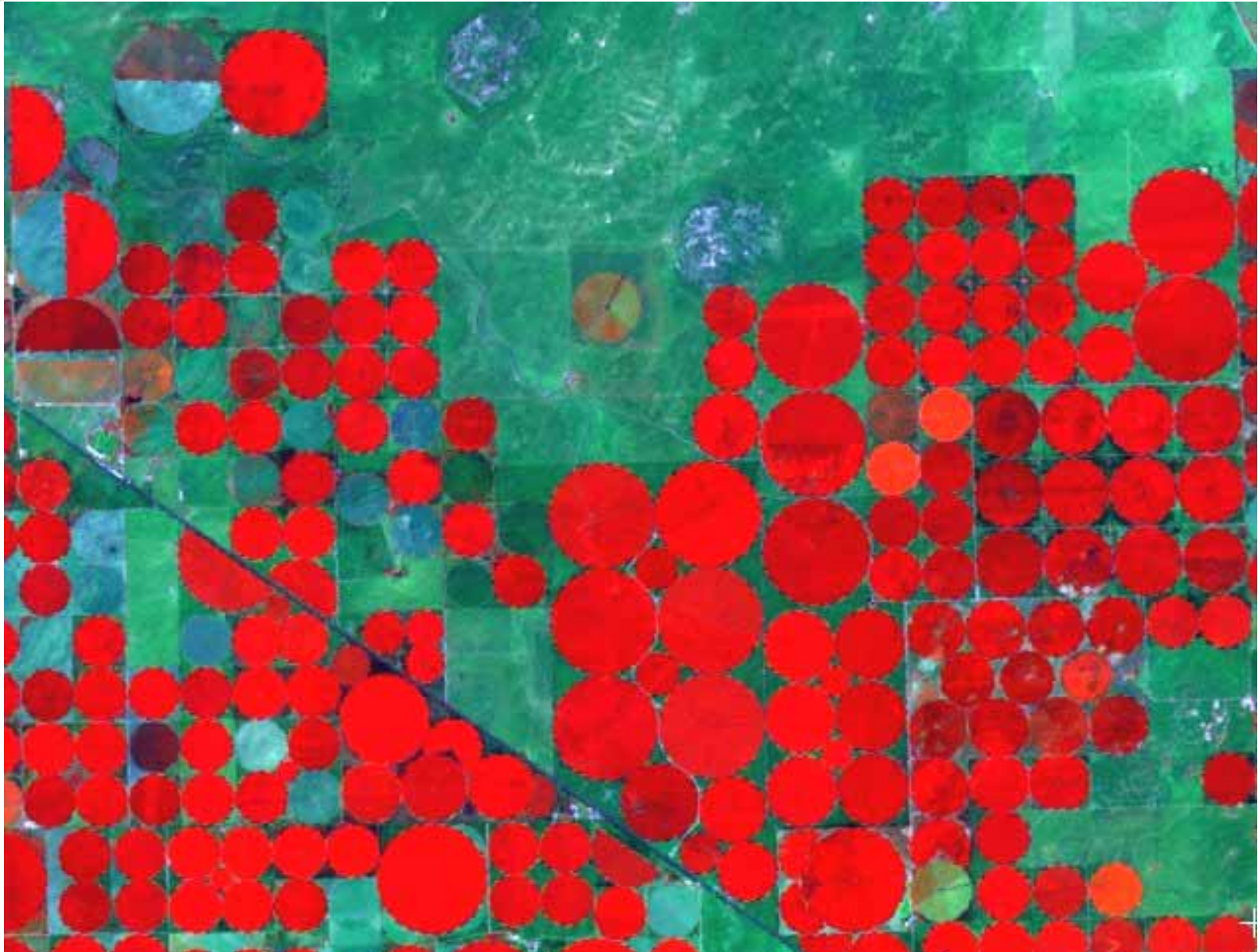


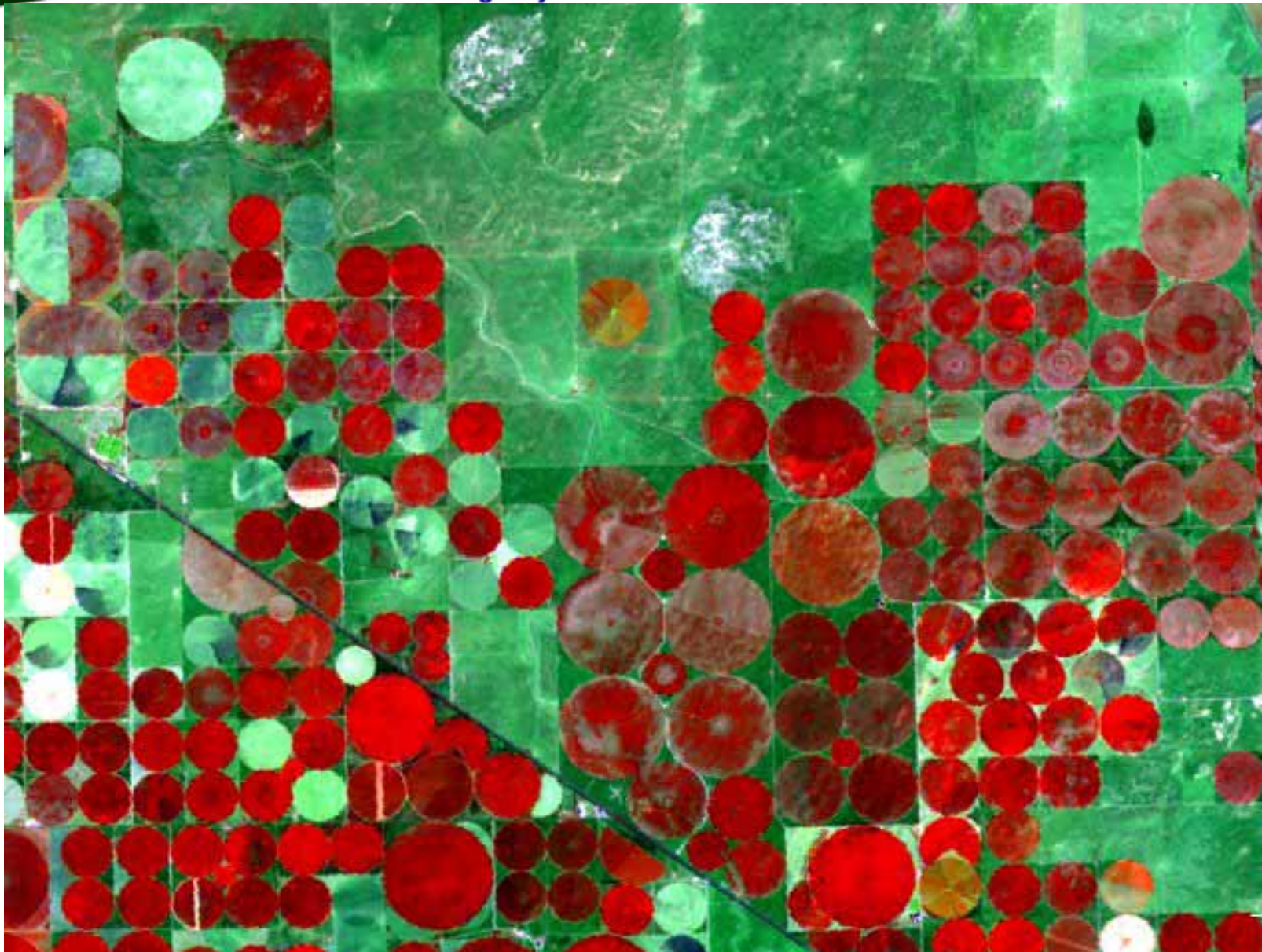


Landsat 5 - TM, Ch. 4,5,3 = RGB

06/20/00

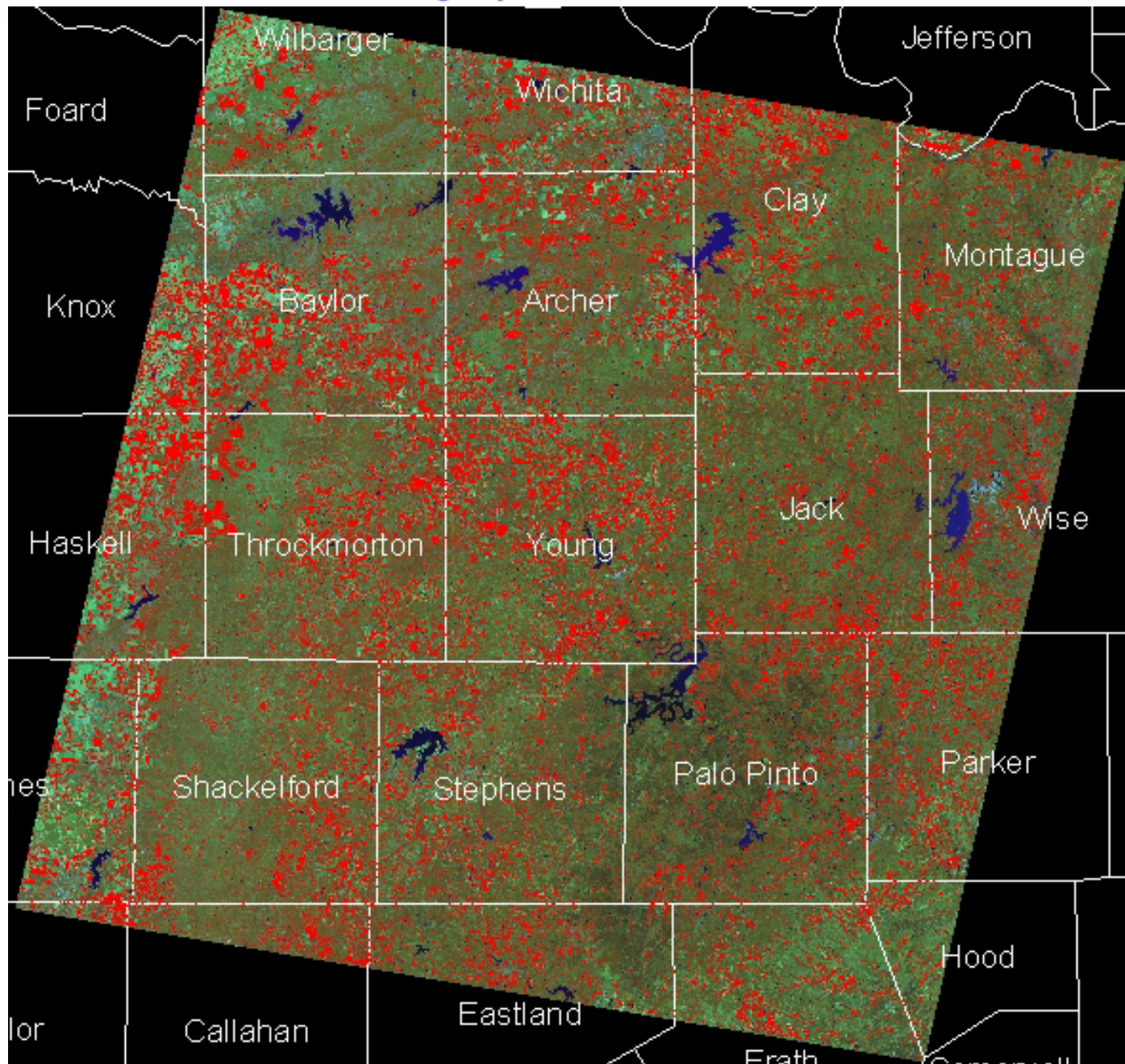




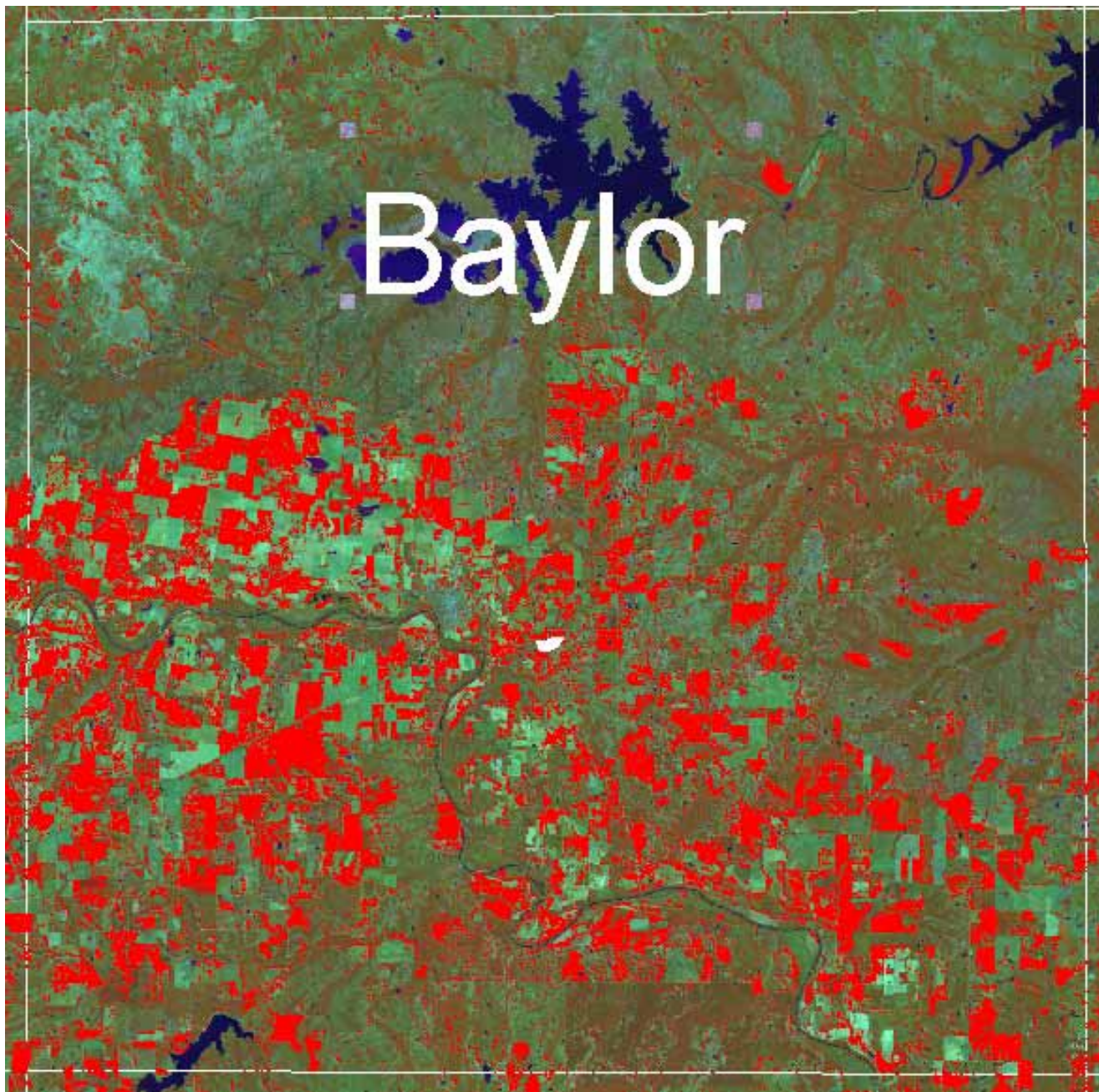


Landsat 5 - TM, Ch. 4,5,3 = RGB

09/08/00



Baylor





Zapalla Co., Texas

Falcon Reservoir



Zapalla Co., Texas

Falcon Reservoir

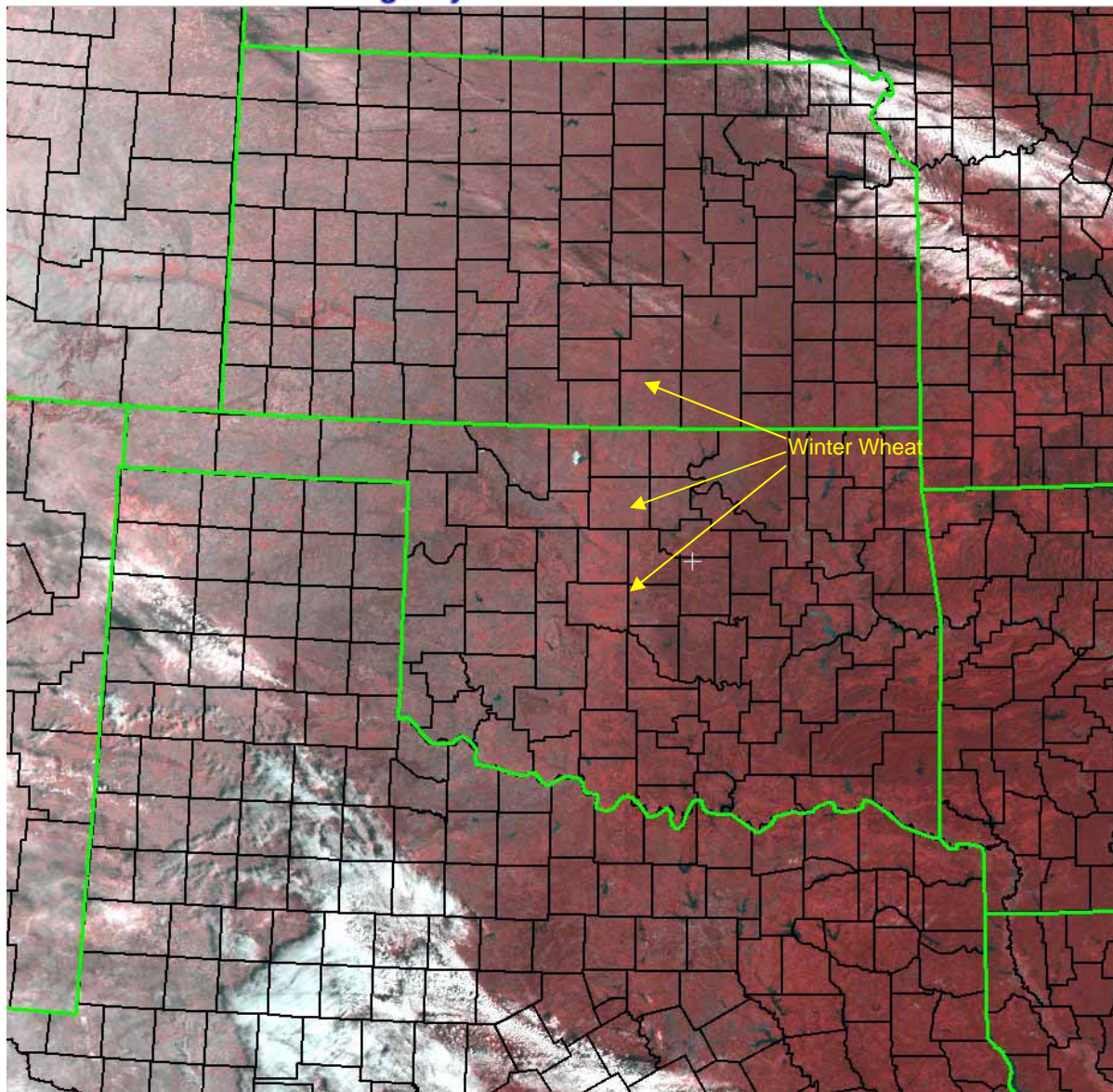


Landsat 5 - TM, Ch. 4,5,3 = RGB

05/23/00

NOAA Polar Orbiter – Kansas, Oklahoma and Texas

Farm Service Agency



NOAA 15 – October 26, 2001